

## **SIMBIOME: A STRUCTURED RESOURCE INVENTORY SYSTEM**

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**Keywords:** Resource inventory, structured data, physics based simulation, dissemination, education

Simbiome is a trusted, online electronic resource inventory system that organizes and presents relevant resources for physics-based simulation of biomedical structures and related entities in biology and life sciences. It is part of the Simbios dissemination effort and is available online at <http://simbiome.org>. The code to run the site is open source and available under the MIT license (<https://simtk.org/svn/simbiome>).

Simbiome is designed to manage a set of structured, versioned resources, with curation by a group of people. The resources in Simbiome each describe an available software package, data set, or online resource for physics based simulation. A curation team, composed of Simbios staff members, moderates entries in Simbiome. Their goal is to create and maintain resources that represent high quality and reliability for the community. Suggestions and edits for resources are submitted by the public and by content owners, and these suggestions are then edited and approved by the curation team. The public also provides feedback and ratings for entries. Simbiome entries include a specific set of structured data (for example, the project name, the URL, keywords, etc.) Simbiome uses 15 database tables to support the data model for entries, users and authorization, and related links between entries.

Simbiome is built with the object-oriented language, Ruby, and a web development framework called Ruby on Rails. The Rails framework incorporates many systematic best practices for web development and includes a native object-relational mapping tool for easy integration with databases. The primary benefits to using Rails are fast development times, ease and flexibility in changing and maintaining data models and presentation, and fewer lines of code.

Simbiome is funded by the National Institutes of Health through the NIH Roadmap for Medical Research, Grant U54 GM072970.

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